

U.S. Serial No. 10/652,390
Reply to Office Action of: March 31, 2006
Family Number: P2002J085 US2

Page 2

AMENDMENTS TO THE CLAIMS

1. (currently amended) An unsulfided hydrodewaxing catalyst comprising a Group VIII metal component and a dewaxing component wherein said catalyst is made by reduction and then treatment with a hydrocarbon stream containing one or more oxygenates, and wherein said Group VII metal is Pt, Pd or mixtures thereof.
2. (currently amended) A catalyst according to claim 1 wherein the hydrocarbon stream used for said treatment is produced over a noncobalt Fischer Tropsch catalyst.
3. (original) A catalyst according to claim 2 wherein the noncobalt catalyst is at least one of Fe, Ni, Ru, Re or Rh.
4. (original) A catalyst according to claim 3 wherein the noncobalt catalyst is Fe or Ru.
5. (original) A catalyst according to claim 4 wherein said oxygenates comprise one or more oxygen containing molecules.
6. (original) A catalyst according to claim 5 wherein said oxygenates comprise one or more functional groups containing hydroxyl, mono and polyhydric alcohols, esters, ethers, ketones, aldehydes, carboxylic acids, and mixtures thereof.
7. (original) A catalyst according to claim 6 wherein said one or more oxygenates are present in said treating hydrocarbon in an amount of at least 100 wppm, measured as oxygen,

U.S. Serial No. 10/652,390

Reply to Office Action of: March 31, 2006

Family Number: P2002J085 US2

Page 3

8. (original) A catalyst according to claim 7 wherein said one or more oxygenates are present in said treating hydrocarbon in an amount of at least 200 wppm, measured as oxygen.

9. (original) A catalyst according to claim 8 wherein the hydrodewaxing catalyst contains at least one molecular sieve.

10. (original) A catalyst according to claim 9 wherein the molecular sieve is at least one of ZSM-5, ZSM-11, ZSM-22, ZSM-23, ZSM-35, ZSM-48, ZSM-57, ferrierite, EU-1, NU-87, ITQ-13 or MCM-71, and wherein the molecular sieve contains at least one 10 or 12 ring channel.

11. (original) A catalyst according to claim 10 wherein the molecular sieve is ZSM-48.

12. (original) A catalyst according to claim 9 wherein the molecular sieve is at least one of zeolite beta, ZSM-12, MCM-68, ZSM-18, offretite, mordenite or faujasite.

13. (cancelled)

14. (currently amended) A process for hydrodewaxing waxy Fischer-Tropsch hydrocarbons produced over a noncobalt catalyst to produce a dewaxed base stock which process comprises contacting said hydrocarbons with hydrogen, in the presence of a treated, unsulfided hydrodewaxing catalyst comprising a Group VIII metal component and a dewaxing component, at reaction conditions effective to hydrodewax said waxy hydrocarbons and reduce their pour and cloud points, wherein said catalyst

U.S. Serial No. 10/652,390
Reply to Office Action of: March 31, 2006
Family Number: P2002J085 US2

Page 4

has been reduced and then treated with a hydrocarbon stream containing one or more oxygenates prior to said hydrodewaxing.

15. (currently amended) A process according to claim 14 wherein said hydrocarbon stream used for said treatment is produced over a noncobalt Fischer Tropsch catalyst.

16. (original) A process according to claim 15 wherein the noncobalt catalyst is at least one of Fe, Ni, Ru, Re or Rh.

17. (original) A process according to claim 16 wherein the noncobalt catalyst is Fe or Ru.

18. (original) A process according to claim 17 wherein said oxygenates comprise one or more oxygen containing molecules.

19. (original) A process according to claim 18 wherein said oxygenates comprise one or more functional groups containing hydroxyl, mono and polyhydric alcohols, esters, ethers, ketones, aldehydes, carboxylic acids, and mixtures thereof.

20. (original) A process according to claim 19 wherein said one or more oxygenates are present in said treating hydrocarbon in an amount of at least 100 wppm, measured as oxygen.

21. (original) A process of claim 20 wherein the hydrodewaxing catalyst contains at least one molecular sieve.

U.S. Serial No. 10/652,390

Reply to Office Action of: March 31, 2006

Page 5

Family Number: P2002J085 US2

22. (original) A process of claim 21 wherein the molecular sieve is at least one of ZSM-5, ZSM-11, ZSM-22, ZSM-23, ZSM-35, ZSM-48, ZSM-57, ferrierite, EU-1, NU-87, ITQ-13 or MCM-71, and wherein the molecular sieve contains at least one 10 or 12 ring channel.

23. (original) A process of claim 21 wherein the molecular sieve is at least one of zeolite beta, ZSM-12, MCM-68, ZSM-18, offretite, mordenite or faujasite.

24. (original) A process of claim 22 wherein the molecular sieve is ZSM-48.

25. (original) A process according to claim 21 wherein said one or more oxygenates are present in an amount of at least 200 wppm, measured as oxygen.

26. (currently amended) A process according to claim 25 wherein said dewaxed base stock comprises hydrodewaxed hydrocarbons ~~comprise~~ at least one of (a) a fuel stock and (b) a lubricant base stock.

27. (original) A process according to claim 26 wherein said stock has been hydrorefined and optionally dehazed.

28. (original) A process according to claim 27 wherein said stock comprises a lubricant base stock and wherein said lubricant base stock is combined with one or more lubricant additives to form a lubricant.

29. (currently amended) A process for synthesizing and hydrodewaxing waxy hydrocarbons comprises reacting H₂ and CO in the presence of a non-shifting Fischer-Tropsch hydrocarbon synthesis catalyst having a noncobalt catalytic component, at reaction conditions effective to form waxy hydrocarbons,

U.S. Serial No. 10/652,390

Reply to Office Action of: March 31, 2006 \

Family Number: P2002J085 US2

Page 6

hydrodewaxing at least a portion of said waxy hydrocarbons in the presence of hydrogen and an unsulfided hydrodewaxing catalyst comprising a Group VIII metal component and dewaxing component, at reaction conditions effective to hydrodewax said waxy hydrocarbons to reduce their pour and cloud points and produce one or more hydrodewaxed hydrocarbon fractions boiling in the fuel and/or lubricant oil range, and wherein said hydrodewaxing catalyst has been reduced and then treated with a hydrocarbon stream containing one or more oxygenates prior to said hydrodewaxing.

30. (currently amended) A process according to claim ~~29~~ 64 wherein said noncobalt component is at least one of Fe, Ni, Ru, Re or Rh.

31. (original) A process according to claim 30 wherein said oxygenates comprise one or more oxygen containing molecules.

32. (original) A process according to claim 31 wherein said oxygenates comprise one or more functional groups containing hydroxyl, mono and polyhydric alcohols, esters, ethers, ketones, aldehydes, carboxylic acids, and mixtures thereof.

33. (currently amended) A process according to claim 32 wherein at least a portion of said one or more oxygenates are indigenous to said treating hydrocarbon stream and are present in an amount of at least 200 wppm, measured as oxygen.

34. (original) A process according to claim 33 wherein the hydrodewaxing catalyst contains at least one molecular sieve.

35. (original) A process of claim 34 wherein the hydrodewaxing catalyst contains at least one of ZSM-5, ZSM-11, ZSM-22, ZSM-23, ZSM-35, ZSM-48,

U.S. Serial No. 10/652,390
Reply to Office Action of: March 31, 2006
Family Number: P2002J085 US2

Page 7

ZSM-57, ferrierite, EU-1, NU-87, ITQ-13 or MCM-71, and wherein the molecular sieve contains at least one 10 or 12 ring channel.

36. (original) A process of claim 35 wherein the hydrodewaxing catalyst contains at least one of zeolite beta, ZSM-12, MCM-68, ZSM-18, offretite, mordenite or faujasite.

37. (original) A process of claim 35 wherein the hydrodewaxing catalyst contains ZSM-48.

38. (currently amended) A process according to claim 34 wherein said ~~dewaxed hydrocarbons~~ hydrodewaxed hydrocarbon fractions comprise one or more of a fuel and a lubricant base stock and wherein one or more stocks are hydrorefined and optionally dehazed.

39. (original) A process according to claim 38 wherein said stock comprises a lubricant base stock which is combined with one or more lubricant additives to form a lubricant.

40. (original) A process for hydrodewaxing waxy Fischer Tropsch hydrocarbons produced over a noncobalt catalyst which comprises contacting said waxy hydrocarbons containing one or more oxygenates with hydrogen, in the presence of an unsulfided hydrodewaxing catalyst comprising a hydrodewaxing component and a Group VIII metal component, at reaction conditions effective to hydrodewax said waxy hydrocarbons and reduce their pour and cloud points, wherein said hydrodewaxing catalyst has been reduced.

41. (original) A process according to claim 40 wherein said oxygenates comprise one or more oxygen containing molecules.

U.S. Serial No. 10/652,390
Reply to Office Action of: March 31, 2006
Family Number: P2002J085 US2

Page 8

42. (original) A process according to claim 41 wherein said oxygenates comprise one or more functional groups containing hydroxyl, mono and polyhydric alcohols, esters, ethers, ketones, aldehydes, carboxylic acids, and mixtures thereof.

43. (original) A process according to claim 42 wherein said one or more oxygenates are present in an amount of at least 100 wppm, measured as oxygen.

44. (original) A process according to claim 43 wherein the noncobalt catalyst is at least one of Fe, Ni, Ru, Re or Rh.

45. (original) A process according to claim 44 wherein the hydrodewaxing catalyst contains at least one molecular sieve.

46. (original) A process of claim 45 wherein the hydrodewaxing catalyst contains at least one of ZSM-5, ZSM-11, ZSM-22, ZSM-23, ZSM-35, ZSM-48, ZSM-57, ferrierite, EU-1, NU-87, ITQ-13 or MCM-71, and wherein the molecular sieve contains at least one 10 or 12 ring channel.

47. (original) A process of claim 45 wherein the hydrodewaxing catalyst contains at least one of zeolite beta, ZSM-12, MCM-68, ZSM-18, offretite, mordenite or faujasite.

48. (original) A process of claim 46 wherein the hydrodewaxing catalyst contains ZSM-48.

49. (original) A process according to claim 45 wherein the oxygenate is present in an amount of at least 200 wppm, measured as oxygen.

U.S. Serial No. 10/652,390
Reply to Office Action of: March 31, 2006
Family Number: P2002J085 US2

Page 9

50. (currently amended) A process for hydrodewaxing Fischer-Tropsch hydrocarbons produced over at least one of a Fe or Ru Fischer-Tropsch catalyst which comprises contacting said hydrocarbons with hydrogen, in the presence of a treated, unsulfided hydrodewaxing catalyst comprising a Group VIII metal component and a dewaxing component which is at least one of ZSM-22, ZSM-23, ZSM-35, ZSM-48 or ZSM-57 at reaction conditions effective to hydrodewax said waxy hydrocarbons and reduce their pour and cloud points, wherein said catalyst has been reduced and then treated with a hydrocarbon stream containing one or more oxygenates prior to said hydrodewaxing.

51. (original) A process according to claim 50 wherein said oxygenates comprise one or more oxygen containing molecules.

52. (original) A process according to claim 51 wherein said oxygenates comprise one or more functional groups containing hydroxyl, mono and polyhydric alcohols, esters, ethers, ketones, aldehydes, carboxylic acids, and mixtures thereof.

53. (original) A process according to claim 52 wherein said one or more oxygenates are present in an amount of at least 100 wppm, measured as oxygen.

54. (original) A process claim 53 wherein the hydrodewaxing catalyst contains ZSM-48.

55. (original) A process according to claims 14, 29, 40 or 50 wherein said reaction conditions effective to hydrodewax include temperatures of from 232-399 °C, pressures of from 170 - 13891 kPa, liquid hourly space velocities of from 0.1-5.0 and hourly treat gas rates of 89-1789 m³/m³.

U.S. Serial No. 10/652,390
Reply to Office Action of: March 31, 2006
Family Number: P2002J085 US2

Page 10

56. (original) A process according to claims 14, 29, 40 or 50 wherein said hydrodewaxing catalyst further comprises an alumina or alumina-containing metal oxide binder.

57. (currently amended) A process for hydrodewaxing waxy Fischer-Tropsch hydrocarbons produced over a noncobalt catalyst which comprises contacting said hydrocarbons with hydrogen, in the presence of a treated, unsulfided hydrodewaxing catalyst comprising a Group VIII metal component and a dewaxing component, at reaction conditions effective to hydrodewax said waxy hydrocarbons and reduce their pour and cloud points, wherein said catalyst has been reduced and then treated with a hydrocarbon stream containing water prior to said hydrodewaxing.

58. (currently amended) A process according to claim 57 wherein said ~~oxygenate comprises one or more oxygen-containing molecules~~hydrocarbon stream includes one or more indigenous oxygenates.

59. (currently amended) A process according to claim 58 wherein said oxygenates comprise, ~~preferably one or more functional groups containing hydroxyl,~~ mono and polyhydric alcohols, esters, ethers, ketones, aldehydes, carboxylic acids, and mixtures thereof.

60. (original) A process according to claim 59 wherein water is present in an amount of at least 100 wppm, measured as oxygen.

61. (original) A process according to claim 60 wherein said waxy hydrocarbons comprise hydrocarbons boiling in either or both the fuels and lubricant oil ranges.

U.S. Serial No. 10/652,390

Reply to Office Action of: March 31, 2006

Family Number: P2002J085 US2

Page 11

62. (original) A process according to claim 61 wherein said reaction conditions effective to hydrodewax include temperatures of from 232-399 °C, pressures of from 170 - 13891 kPa, liquid hourly space velocities of from 0.1-5.0 and treat gas rates of 89-1789 m³/m³.

63. (original) A process according to claim 62 wherein said hydrodewaxing catalyst further comprises an alumina or alumina-containing metal oxide binder.

64. (new) A process according to claim 29 wherein the hydrocarbon stream used for the treatment is produced over a Fischer-Tropsch catalyst having a noncobalt catalytic component.